Final Notes October 13, 1998

IMPLEMENTATION TEAM MEETING NOTES

September 10, 1998, 9:00 a.m.-4:00 p.m.

NATIONAL MARINE FISHERIES SERVICE OFFICES
PORTLAND, OREGON

I. Greetings and Introductions.

The September 10, 1998 meeting of the Implementation Team, held at the National Marine Fisheries Service's offices in Portland, Oregon, was chaired by Brian Brown of NMFS and facilitated by Donna Silverberg. The agenda for the September 10 meeting and a list of attendees are attached as Enclosures A and B.

The following is a distillation (not a verbatim transcript) of items discussed at the meeting, together with actions taken on those items. Please note that some enclosures referenced in the body of the text may be too lengthy to attach; all enclosures referenced are available upon request from NMFS's Kathy Ceballos at 503/230-5420 or via email at kathy.ceballos@noaa.gov.

I. Introductions and Review of Agenda.

Brown welcomed everyone to the meeting, led a round of introductions and a review of the agenda.

II. Updates.

a. In-Season Management. TMT chairwoman Cindy Henriksen distributed a spreadsheet (Enclosure C) showing project-by-project elevation and flow data for the period of March 8 through September 27, 1998; in general, she said, the spring and summer season flow objectives at Lower Granite were exceeded in 1998. Dworshak drafted to near elevation 1520 feet by August 31, she said; that project is currently releasing minimum flow (1.3 Kcfs), an operation that will continue for the foreseeable future. Henriksen said Idaho Power released its 237 KAF in 1998, and shaped an additional 139 Kcfs for the Bureau of Reclamation; the delivery of the Upper Snake flow augmentation water proceeded as discussed early in the season. At McNary, the spring flow objective of 228 Kcfs was exceeded by 61 Kcfs; the summer average flow at McNary was 173 Kcfs, less than the summer season flow target of 200 Kcfs. In order to achieve that, Libby drafted to elevation 2443.9 feet by August 31; a 106 Ksfd Libby/Arrow swap allowed Libby to remain above its interim draft limit of 2439 feet, Henriksen explained.

Hungry Horse was drafted to its interim draft limit of 3540 feet by August 31, she continued; at Grand Coulee, an agreement was reached to draft to elevation 1279 on August 31. That project is currently operating between elevation 1280 and 1282 feet. Most projects in the system are now setting up for winter operations, Henriksen said – Libby will be near elevation

2411 on December 31, Hungry Horse will be near elevation 2431 feet by that date, Grand Coulee is expected to refill somewhat in October, to an elevation that has not yet been determined.

Jim Nielsen of WDFW expressed the salmon managers' appreciation for Idaho Power's cooperation during the summer period, in particular, IPC's willingness to evacuate its 237 KAF contribution in July, and for drafting an additional 6.5 feet below elevation 2049 at Brownlee during the summer flow augmentation period.

Reclamation's Ron McKown added that, according to preliminary estimates, 1999 runoff volume is expected to be in the range of 140 MAF-190 MAF, considerably higher than the near-normal 1998 volume of 102 MAF. Just to provide some perspective, Henriksen said, the January-July runoff volume in 1997, the biggest water year in over 100 years, was 159 MAF. I guess the message is, enjoy the sunshine while you can, said McKown.

Henriksen added that the TMT post-season review process will begin with a meeting on Monday, October 5; anyone with an interest in the TMT's activities is invited to attend. In response to a question from Brown, Henriksen said it should be possible for the TMT to prepare a "post-mortem" overview of the 1998 management season in time for the IT and Executive Committee meetings in November. We'll add that presentation to the November 5 IT agenda, Brown said.

b. Plan for Analyzing and Testing Hypotheses (PATH). No PATH update was presented at today's meeting.

c. Integrated Scientific Advisory Board (ISAB). Chip McConnaha provided an overview of the recently-released ISAB report, "Recommendations for Stable Flows in the Hanford Reach During the Time When Juvenile Fall Chinook are Present Each Spring." This report was generated on the ISAB's own initiative, he explained, something they may do from time to time when an issue arises that they feel particularly strongly about. He distributed copies of this paper, available as Enclosure I, explaining that it is intended to address the problem of fluctuating flows in the Mid-Columbia reach as projects follow load during the spring period.

McConnaha spent a few minutes going through the ISAB's report; please see Enclosure G for details of his presentation. In terms of conclusions, McConnaha said,

> "[The ISAB] strongly recommend that the Council and NMFS call for BPA and the mid-Columbia PUDs to annually, beginning in 1999, augment the protection of spawning of fall chinook in the Hanford Reach by maintaining stable flows out of Priest Rapids Dam during the period of emergence of fry from the redds, and by continuing stable flows until the fry have moved downstream. There should be no load following or other sharp fluctuations in flow in that period until such time in the spring each year when it is determined by field observations that the danger of stranding of juvenile salmon has passed."

Basically, what they're calling for here is an extension of the Vernita Bar-type agreement, McConnaha explained – that flows be regulated to protect juvenile fish until they move downstream, at which time control can return to power operations. That is the essence of this

report, which has now been provided to the Council and NMFS, he said. Copies of the report are available through the Council's Internet homepage, he added.

In response to a question, Nielsen said the period of fall chinook emergence typically begins in mid-March and continues through late May or early June; the period of vulnerability for these fish is generally over by the end of June. Bear in mind also that this is a low-water phenomenon, McConnaha said – in 1997, an excellent water year, WDFW studies indicated few if any stranding problems.

Is the Council contemplating any action on this issue? Brown asked. Not immediately, McConnaha replied, but they have begun discussions on how much it might cost, and to what extent it might impact the power system. There will be a Council staff analysis of those impacts forthcoming, he said, but beyond that, I can't give you any specifics. I think the real action on this issue will take place within the Mid-Columbia Coordinating Committee and FERC, Nielsen observed.

I'm not sure how this will be resolved, said Dan Daley, but based on the conversations I've had internally at BPA, this is not going to be a simple problem to resolve – it is going to involve a wide variety of entities throughout the region. One question I have for the ISAB is whether they've considered any other potential solutions to the problem beyond a flat recommendation for stable flows, he said – was there any consideration of the possibility that something less than that may achieve a significant proportion of the desired effect? In a word, no, McConnaha replied – the ISAB are not power system experts, and they're unlikely to make a recommendation about how you might be able to dampen out Mid-Columbia flows through, say, re-regulation of flows at Grand Coulee. Their main goal was to try to focus some regional attention on this problem, he said – they really haven't looked at any alternatives to their recommendation.

My concern is that this issue came up during the in-season management period in 1998, and there wasn't much in the way of positive action in response to the concerns raised about the stranding issue, said Brown – there was basically a lot of finger-pointing, and I would hope to resolve this issue, if we can, prior to the next migration season. Perhaps we should revisit this issue in a couple of months, and see whether there are some conversations that need to occur prior to next spring, Silverberg suggested. After some minutes of further discussion, Nielsen said the parties to the Vernita Bar agreement hope to hold a preliminary meeting on this issue in mid-October; at the meeting, we will discuss the results from the 1998 stranding survey and bathymetric survey, and may be able to provide a further report at the November IT meeting, he said.

d. Dissolved Gas Team (DGT). NMFS' Mark Schneider said the DGT has been working to flesh out the two research outlines requested by the IT. He distributed Enclosure D, the most recent draft outlines of future research needs in two areas: dissolved gas impacts on adult fish, and assessment of physical injury to fish passed via spill. He also distributed copies of a letter from the Columbia Basin Fish and Wildlife Authority to Col. Mogrin of the Corps, outlining CBFWA's proposed near-term total dissolved gas abatement and enhanced juvenile salmon survival initiative (Enclosure E), also known as the "fast-track" proposal.

Schneider spent a few minutes going through the DGT research outline (Enclosure D); please

see this document for details of his presentation. He explained that, with regard to the physical injury portion of this outline, the DGT feels that the expertise to assess the potential for injury to fish from dissolved gas abatement structures resides primarily within the SCT and FFDRWG, not the DGT; further development of physical injury research needs should therefore most appropriately take place in SCT and FFDRWG.

Schneider added that the Corps has now begun a scoping process in response to the CBFWA "fast track" letter, to investigate potential near-term gas abatement strategies. It was within that scoping process that the physical injury research outline included in Enclosure D was developed, he explained. The Corps is moving quickly to flesh out this outline, he said; it is anticipated that this effort will be completed by the end of October.

How does the CBFWA proposal fit in with the maximum spill alternative that is being developed under the Lower Columbia Configuration Study called for in the 1998 supplemental Biological Opinion? asked Daley. Are they one and the same, or is this CBFWA initiative a separate process? I'm not sure how they link up, Schneider replied. The idea behind the CBFWA initiative is to employ some of the new technology we've now demonstrated, such as the new flow deflector designs at John Day and Ice Harbor, as soon as possible, so that spill can be used as a safe means of passage, and the production of dissolved gas is minimized, said Witt Anderson of the Corps. How that relates to the Lower Columbia Feasibility Study is a good question, he said.

The other question, of course, is funding for the fast-track approach – in a limited-funding situation, how does this initiative stack up against our other priorities? Anderson said. Particularly given concerns that have been raised about gold-plating some of these projects, where does this fast-track approach fit into the long-term strategy in the basin? Frankly, at this point, I'm not sure anyone has an answer to that, he said.

So it sounds as though the physical injury research will be addressed through the Corps' CRFM program, under the oversight of SCT and FFDRWG, said Anderson. Does the DGT feel that the adult research is something they can oversee under the BPA direct-funded program? That is my assumption, Schneider replied – once this outline has been developed, the plan at this point is to work it into the BPA implementation process. Brown observed that the SCT is considering a proposal for fast-tracking the implementation of gas abatement measures at certain projects in its FY'99 ranking process. This proposal is independent of the studies we've been discussing today, he said, but if it is prioritized for funding by the SCT, it may be that some of the physical injury questions will need to be addressed by the design teams.

It also may be worthwhile for the IT to think about the appropriateness of using the DGT to oversee research, Brown continued. In my mind, Schneider said, that would be appropriate, at least in terms of overseeing the development of the retrospective analysis of existing adult information and the outline of adult research needs. Once that retrospective analysis and outline have been finalized, it becomes an implementation issue, to be addressed through the BPA direct funding process, Schneider said. At that point, the DGT's involvement will probably end, until there is something more, in terms of specific research proposals, to be looked at, he explained.

e. System Configuration Team (SCT). The SCT update was presented under Agenda Item IV.

f. Decision Process Coordinating Group (DPCG). The DPCG update was addressed during the following agenda item.

III. Future of the Decision Process Coordinating Group.

DPCG coordinator Ed Sheets led this discussion, focused on the future role of the Decision Process Coordinating Group. He distributed a memo, dated September 7, which lays out the following issues:

? Has the DPCG completed its tasks and should it be dissolved?

? Should the group's recommendations be implemented, or should the 1999 decision be addressed in a collaborative process through the multi-species framework process or the proposed Columbia River Basin Forum?

This memo is available as Enclosure F; please see this document for detailed background on and analysis of these issues.

The IT spent a few minutes discussing these issues and the current status of 1999 decision process development; ultimately, there was general agreement that, given the fact that the multi-species framework and Columbia River Basin Forum processes are not yet fully functional, the DPCG can continue to serve a useful function, in terms of discussing information and issues related to the 1999 decision and preparing them for discussion at IT and other Regional Forum groups. The IT's recommendation was that the DPCG remain active, at least at a low level, meeting when appropriate, to facilitate information sharing and development, outreach and coordination among the various entities working on, and with an interest in, the 1999 decision process development. In addition, it was agreed that the DPCG should monitor the progress of the multispecies framework approach group, and should make an effort to get on the agenda of a future Columbia River Basin Forum meeting to discuss the framework development.

IV. Update on the Ranking of FY'99 Activities for the CRFM Program.

NMFS' Bill Hevlin said the SCT is continuing its ranking process for proposed FY'99 Columbia River Fish Mitigation (CRFM) activities; that process began in earnest at the August 14 SCT meeting, and will continue at the next SCT meeting on September 16. At the last meeting, we added several new line items to comply with the requirements in the 1998 steelhead supplemental Biological Opinion, Hevlin said. In terms of the general status of the FY'99 ranking process, the SCT has now separated out the highest and lowest-priority items from the list; now the more difficult task of establishing the relative rankings for the mid-priority or "grey area" items begins, Hevlin explained.

Several line items are actually bundles of activities, Hevlin continued; we have asked the Corps to provide a simple list of those bundled activities so that we can assess the relative priority of each individual item. For example, there are several line-items that have to do with gas abatement; some are relatively simple, like the end-bay flow deflector construction project at Ice Harbor, which is already underway. Others, such as the DGAS program and the fast-track gas abatement project, include multiple items, and we are going to be breaking out those individual activities to determine their relative priority, Hevlin said.

One item that has received extensive discussion is John Day extended screens, he continued. The Corps has identified three options as far as how to proceed with this project – Option A, which would get a prototype in place, with minimal preliminary structural and biological testing, in time for the 1999 migration season, Option B, under which the prototype would be installed in 2000 after more extensive testing, and Option C, which is zero funding for continued screen development at John Day. At its last meeting, the SCT did not endorse any of these options, Hevlin said; instead, it was agreed that the Corps will keep all three options open at this point, and will continue marching as though it was preparing screens for biological testing in 1999. Basically, there was a difference of opinion among the SCT membership, with some participants recommending the faster approach, some favoring the slower approach and some recommending zero funding, Hevlin said; once we have a better idea of what the actual Congressional appropriation will be in FY'99, we may need to bring this issue back to IT for resolution.

In response to a question from John Palensky, Hevlin said the timeline for the development of final SCT rankings and priorities will depend on when the appropriation is finalized. I have heard that it's likely we will be operating under a continuing resolution for another four to six months, which will constrain the pace at which we're able to spend funds, said Witt Anderson. If that works the way it has in the past, we could be constrained to spending only $7.8 million (the lower of the two suggested appropriations from the House and Senate) in the first six months of FY'99, he said. I don't want to scare anyone, Anderson said, but that's the scuttlebutt at this point. Basically, we can continue to refine our rankings in the interim, Hevlin said, but until we know the final amount of the appropriation, we will not be able to come to closure on them.

V. Update from the Steering Committee On Development of Dissolved Gas Abatement Study Plan.

Jim Ruff of the Council staff reminded the IT that the SCT and DGT were tasked some time ago to develop a systemwide approach to dissolved gas management for the entire basin. While we were in the process of doing that, there was a conference in Castlegar, British Columbia, out of which was formed a related basinwide dissolved gas planning effort, Ruff said. The timing was extremely fortunate, because it brought both U.S. and Canadian interests together to discuss transboundary issues, including dissolved gas management and water quality.

As a result of those meetings, and the enthusiasm of the Canadian participants, we have formed a transboundary gas group, comprised of representatives from both sides of the border, Ruff explained. At a meeting on June 11, a number of work groups were formed, one of which was a systemwide dissolved gas abatement steering committee. This group, co-chaired by Les Swain of the B.C. Ministry of the Environment, Mary Lou Soscia of EPA and myself, has met several times over the summer, Ruff said. He distributed Enclosure G, a paper outlining the role of the systemwide dissolved gas abatement steering committee, its goals, structure, and the major elements of the systemwide dissolved gas abatement study plan (please see this document for details). The overall goal of the steering committee, Ruff said, is to develop an action plan for systemwide dissolved gas abatement. The systemwide gas abatement study plan will evaluate and reduce gas, on a systemwide basis, in the most cost-effective manner, he explained. As far as I know, he added, this is the only group that is looking at dissolved gas abatement in a truly systemwide context.

The plan is still being refined, Ruff said; the next steering committee meeting has been set for September 30. In the interim, the various work groups identified under this effort will be working on individual elements of the study plan, which are due back to the steering committee on September 18. The steering committee's goal is to develop a draft study plan for presentation at the next meeting of the full transboundary gas group on October 15 in Vancouver, B.C., Ruff said.

There has been some confusion about the role of the transboundary gas group in the context of the original assignment from the IT to the SCT and DGT, added Mary Lou Soscia – our hope is that this paper (Enclosure G) will articulate how the original assignment from the IT is being addressed.

Any sense of who will be bringing resources to the table, in terms of funding the development of the systemwide plan? Anderson asked. We're looking into a variety of funding sources, Ruff replied; I think it will eventually be some sort of cooperative funding arrangement, through a number of different agencies on both sides of the border.

Have the Canadian entities made any sort of commitment to making structural and operational modifications, using their own funds, to abate gas at their projects? asked BPA's Dan Daley. We haven't gotten that far yet, Ruff replied, any more than any of the U.S. agencies have committed those kinds of resources to this effort. All I can tell you is that we will develop a study plan, including cost estimates, which will be submitted to the appropriate entities for funding; we will have more on this subject to discuss with the IT at its November meeting, and at some point, it may be appropriate to include it on the Executive Committee agenda as well, said Ruff. So noted, said Brown.

VI. 1998 Harvest Levels.

Robert Bailey, of the NMFS, said that as is customary this time of year, the states, tribes and other parties to U.S. v. Oregon have been reviewing the fisheries proposals for the fall season. The Fish and Wildlife Service submitted its Biological Assessment in June, he said; there have been a series of discussions since it was submitted, in an effort to fine-tune it somewhat. The upshot of those discussions is that a report has now been filed, outlining fisheries proposals and impact levels, Bailey said.

On September 3, Judge Marsh returned a decision that indicated that the federal government needed to prepare a Biological Opinion on those fisheries, Bailey said; we now have a draft Biological Opinion, and hope to get it signed later today. It is a jeopardy opinion; the key concern is impacts to listed wild steelhead. The draft has a reasonable and prudent alternative that would allow a harvest rate of up to 15% of wild steelhead through the tribal fishery. In the meantime, in order to allow the fisheries to proceed, the decision has been made that fisheries through September 12 will not comprise a jeopardy situation.

In response to a question, Bailey said the 15% wild steelhead harvest rate is about half the level that has generally been allowed in recent years.

VII. Modeling Results and Evaluation of Additional Flow Augmentation and Zero Flow Augmentation Options from the Upper Snake River.

Rich Rigby of the Bureau of Reclamation led this discussion; he explained that the analysis of the impacts of providing an additional 1 MAF of flow augmentation water from the Upper Snake River, and its bookend analysis of a zero flow augmentation option, are a part of the Corps' Lower Snake Feasibility Study. Under the 1 MAF additional alternative, Reclamation looked at the potential local impacts of providing a total of 1.427 MAF for flow augmentation from projects above Lower Granite Dam.

Rigby's presentation is captured in a series of overheads (Enclosure H); please refer to this document for details of his talk.

Rigby noted that there are a total of 4.017 million irrigated acres in the Snake River Basin, 3.322 million of which are in Idaho. A total of 1.628 million of those irrigated acres in Idaho are served by Reclamation projects. He said USBR's intent, at this point, is to do a 1 MAF analysis that is programmatic in scope – in other words, it will identify the kind and magnitude of possible impacts to the local area. We have now developed some alternative scenarios, Rigby said; the hydrology models have been run, and technical staff is analyzing the economic, water quality, recreation, fish and wildlife and other impacts. He added that PATH will be analyzing the potential benefits to salmon from this alternative. In terms of schedule, Reclamation hopes to deliver its draft report on the 1 MAF alternative to the Corps by mid-October.

In terms of preliminary observations to date, Rigby said that, while local users have spoken for all available water supplies, there is some water in the Snake River Basin that is surplus to the irrigators' needs. Generally, this surplus water is used to enhance recreation, fish and wildlife and water quality, he explained – in other words, it all has some value. Other observations from the study to date include the fact that providing an additional 1 MAF from the Upper Snake would obviously impact irrigated agriculture and other values.

Rigby then went through the four scenarios Reclamation has included in the 1 MAF analysis:

- No augmentation
- Alternative 427: Provide 427 KAF in augmentation (base case)
- Alternative 1.427 i: Provide 1.427 MAF augmentation; minimize impacts to irrigated agriculture
- Alternative 1.427 r: Provide 1.427 MAF; minimize impacts to reservoir resources

Rigby explained that the intent of Alternative 1.427i was to provide 1.427 MAF in flow augmentation water while avoiding, to the greatest extent possible, negative impacts on Idaho irrigators; in general, it results in much deeper reservoir drafts, and would drain some projects to near empty. Alternative 1.427r was modeled to keep reservoirs at near-normal pools, without regard to the effects on irrigators. Rigby provided a table showing projected irrigation shortages (in terms of acres not irrigated) under each scenario:

Model Run No
Augmentation 427 1427i 1427r
Best Case

Natural flow Data not avail. 4,419 234,819 234,819
Storage 0 0 0 22,315
Total 0 4,419 234,819 257,134
Worst Case
Natural flow Data not avail. 4,419 234,819 234,819
Storage 173,750 173,750 425,000 575,000
Total 173,750 178,169 659,819 809.819
Median Year
Natural flow Data not avail. 4,419 234,819 234,819
Storage 17,500 17,500 47,500 192,500
Total 17,500 21,919 282,319 427,319

Basically, said Rigby, under the worst-case scenario, the storage drafts needed to provide the usual 427 KAF in flow augmentation would result in our drying up just under 174,000 acres that would normally have been irrigated. Under the 1427i run, to provide 1.427 MAF in flow augmentation water in the driest years increases that figure to 425,000 acres. Under the 1427r run, it increases to 575,000 acres.

Bear in mind that those are the figures for the worst case – the driest years, Rigby said. Under average conditions, the storage impacts of providing 427 KAF are a shortage of 17,500 acres that would otherwise have been irrigated; under Alternative 1427i, that figure is 47,500 acres; under Alternative 1427r, it's 192,500 acres. Basically, in the driest years, the impacts to irrigators of providing an additional 1 MAF from the Upper Snake would be very bad; in normal or good water years, the impacts would be much less severe, Rigby said. In response to a question, Rigby reiterated that the total irrigated acreage in the Snake River Basin in Idaho is about 3.3 million acres.

Roger Schiewe of BPA described some additional analysis that has been done on this issue; the bottom line of this analysis is that the provision of an additional 1 MAF from the Upper Snake is estimated to result in a 9 Kcfs average increase in flows at Lower Granite during the month of August.

VIII. "The Columbia-Snake River Flow Targets/Augmentation Program – A White Paper Review With Recommendations for Decision-Makers."

Brown reported that Darryl Olsen and Jim Anderson will be available to discuss this paper at the IT's October meeting; I will also ask Karl Dreher of Idaho to bring the presentation he has been doing around the region to that meeting, Brown said. In essence, these are two direct criticisms of the BiOp flow augmentation program, which suggest that that program should be reviewed, Brown said; it seem logical to use them as a kickoff for that requested review, which will take place over the next few months. It was agreed to table discussion of this item until the IT's October meeting.

IX. Changes in Regional Revenues from Potential Loss of Lower Snake River Dams.

BPA's Audrey Perino led this discussion, first explaining that she was making this report as a

representative of the Corps' Lower Snake River Feasibility Study EIS. She added that this analysis was generated through the work of the hydropower impacts subgroup of the Drawdown Regional Economic Workgroup, which is working to assess the economic side of Snake River drawdown. I just wanted to be clear that I am here today in that guise, rather than as a representative of the Bonneville Power Administration, Perino said.

Perino distributed a handout, showing historical electric price indices by month from October 1994 through August 1998 (Enclosure J). I just wanted to point out that, in the context of the previous discussion about eliminating load following at the mid-Columbia projects, you would see more of a divergence between on-peak and off-peak prices than is shown in this table, she said -- the more generation you move from the on-peak (daytime) to the off-peak (nighttime) period, the greater the divergence. In other words, on-peak and off-peak prices are fairly sensitive to how the hydrosystem is operated, Perino said.

My main purpose today is to discuss the loss in revenue to the region that is expected to occur if the four Lower Snake Dams are removed, Perino continued. For those of you who are familiar with the language in the Lower Snake Feasibility Study, that is Alternative A3; what I will be doing today, she said, is comparing the change in regional revenues under Alternative A3 to Alternative A1, the base case.

The challenge in this analysis, of course, is not to show the current value of the electricity produced by the four Lower Snake dams, Perino said – it is to predict the future value of that generation, particularly in light of the volatility of the deregulated energy marketplace, as well as the volatility of weather and year-to-year runoff. To begin with, the four Lower Snake projects generate about 1,200 aMW of electricity. But water conditions are constantly changing; it takes a fairly complex analysis to say how much these four plants are generating over a series of 50 or 60 water conditions, Perino said. Then the question becomes, how much will the energy generated under each of those conditions be worth a year from now, five years from now, 10 years from now? How much is it worth if we assume a dry water year, a normal water year or a wet water year? Basically, putting this whole analysis together is the job of DREW's hydropower impacts subgroup, Perino said.

Perino said much of the power impacts subgroup's analysis has been based on the figures included in the Council's June report, "Analysis of the Bonneville Power Administration's Potential Future Costs and Revenues." The Council's report, in turn, was developed using an extremely sophisticated West Coast electricity model called Aurora, developed privately by two former Portland General Electric employees. BPA is also using the Aurora model to do a market forecast for the rate case, Perino added.

Perino went through some of the forecasts of the future price of electricity included in the Power Planning Council's report. These forecasts assume various future scenarios, and they also assume zero inflation, Perino explained – in other words, actual electricity prices in the market are likely to be higher than this, because it was agreed for comparability purposes to do everything in the DREW study in real 1997 dollars. The three scenarios assumed in the forecast are, in simple terms, low, medium and high, Perino continued – the lowest levels electricity prices might reach in the next 10 years, the highest electricity prices could reach, and a mid-range or average scenario. Other variables factored into the Council analysis include future natural gas prices and West Coast load growth, as well as the fact that all three scenarios (low,

median and high) assume average water years.

The bottom line, Perino said, is that, when you run these assumptions through a production model like Aurora, which balances loads and resources for the whole West Coast, you get a range of electricity prices in 2020 from about 17.5 mills under the low scenario to about 24 mills under the median scenario and up to 35 mills under the high scenario. She added that, for a variety of reasons, both the Council and BPA believe the "low" scenario is less likely to occur than the "median" scenario.

So what kinds of results do you get, if you apply the prices under these three scenarios to the generation resources in the Lower Snake? Perino asked. Bearing in mind that these are predecisional draft numbers only, she said, if you take the numbers generated by the Aurora model for the Council's report, and multiply them by the generation for the four Lower Snake projects, you get a range of between $150 million and $300 million, depending on what price you assume. Bearing in mind, again, that this is in 1997 dollars, it's likely that the change in revenue to the region if the Lower Snake plants are removed will be somewhere between those two numbers, Perino said, adding that this is the value of the electricity only – a gross cost, not a net cost.

The group spent a few minutes discussing the detailed assumptions underlying these estimates: future loads, natural gas prices, new resource development. The bottom line, Perino said, is that the brave new world of the deregulated energy marketplace makes, to say the least, for some very interesting challenges for electricity planners. She added that she will present additional information as the DREW study moves forward, and more final data becomes available.

The group spent a few minutes discussing the alternatives under study in the Lower Snake Feasibility Study, and concerns that at least some of these alternatives no longer reflect the way the river is actually operated. The discussion turned to the difficulties inherent in modifying these alternatives to produce more useful information; ultimately, Brown asked Perino to talk at the October IT meeting about why it may be too big a job to make these changes for the draft, and what can be done about making these changes for the final.

X. Approval of Minutes from August 6 IT Meeting.

A few comments were made on the notes from the August IT meeting; they have been incorporated into a final draft of the minutes.

XI. Next IT Meeting Date and Agenda Items.

The next meeting of the Implementation Team was set for Thursday, October 1, from 9 a.m. to 4 p.m. in NMFS' Portland offices. The group discussed when the next Executive Committee meeting should be held; it was agreed to schedule this meeting for November, when the review of 1998 operations, the transboundary gas group's work plan, and the most recent set of PATH results will be available for discussion. Brown asked the other IT participants to check with their Executive Committee representatives about the appropriateness of a November meeting; if anyone feels we need that meeting to be sooner, please let Donna, John Palensky or I know prior to October 1, he said. Meeting notes prepared by Jeff Kuechle, BPA contractor.